

# S P E C I F I C A T I O N

EASILY REMOVABLE AND REPLACEABLE TOILET SEAT AND LID

## BACKGROUND OF THE INVENTION

The field of the invention is toilet seats and the invention relates more particularly to methods and devices for easily cleaning the lid and seat of a toilet. The present invention is an improvement over that shown in applicant's U.S. Patent No. 6,643,851, which patent is incorporated herein by reference for purposes of background.

## BRIEF SUMMARY OF THE INVENTION

The present invention is for an easily removable and replaceable toilet seat, lid, and hinge assembly attachable to a toilet of the type having a flat upper surface. The assembly is held against the flat upper surface by attachments means which include a pair of horizontal hinge pins affixed to the toilet seat, lid, and hinge assembly, each horizontal hinge pin hingedly supporting a tang supporting assembly, including a tang removably securable to a female support receptacle assembly affixed over each of two conventionally spaced vertical holes formed through said flat upper surface. The assembly has a seat and a lid held

1 by a pair of seat arms and a pair of lid arms, each seat and lid  
2 arm supporting a hinge pin. A pair of tang supporting assemblies  
3 are held by said hinge pins and each support a tang having an arm  
4 movable between a locked position and an unlocked position. A  
5 pair of female support receptacle boxes are held on the flat  
6 surface. Each receptacle box has an opening into which said tang  
7 may be inserted and each receptacle box has a cover movable  
8 between a closed position and an open position. The cover has a  
9 movable lid which is adjacent to said arm when said cover is in a  
10 closed position and the tang is in its locked position. When  
11 said movable lid is moved into a position where it touches said  
12 arm, the contact with the lid moves said arm from its locked  
13 position to its unlocked position, whereby said toilet seat, lid,  
14 and hinge assembly may be removed. This permits easy cleaning of  
15 the flat upper surface of the toilet. In its normal attached  
16 configuration, said female support receptacle is protected by  
17 said cover while being operable from the exterior of said cover.

#### 18 BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

19 Figure 1 is a side view partly in cross-section of the  
20 easily removable and replaceable toilet seat, lid, and hinge  
21 assembly of the present invention.

1           Figure 2 is a perspective view of the tang supporting  
2 assembly thereof.

3           Figure 3 is a perspective view of the female support  
4 receptacle box thereof.

5                           **DETAILED DESCRIPTION OF THE INVENTION**

6           The easily removable and replaceable toilet seat, lid and  
7 hinge assembly is shown in side view in Figure 1 and indicated  
8 generally by reference character 10. Assembly 10 holds a toilet  
9 seat lid 11, by way of a lid arm 13, and a toilet seat 12, by way  
10 of a seat arm 14. The lid arm and seat arm hold a hinge pin 15  
11 which is one of a pair of hinge pins in the overall assembly.  
12 Hinge pin 15 holds a hinge pin supporting arm 16 shown best in  
13 Figure 2. Hinge pin supporting arm 16 is a portion of and holds  
14 the tang supporting assembly to the lid and seat.

15           As shown in Figure 2, the hinge pin supporting arm 16 is  
16 formed integrally with a tang 17 which has a tang frame 18. Tang  
17 17 supports an arm 19. Arm 19 has forward side 20, a left side  
18 21, a right side 22, and a rearward side 23. Rearward side 23 is  
19 flexibly cantilevered from tang frame 18 by way of a living hinge  
20 24.

1 Forward side 20 has a stop edge 25 which is a portion of  
2 forward side 20. A central recess 26 is formed in the middle of  
3 forward side 20 and divides the stop edge into two halves.

4 The details of the female support receptacle box 26 are  
5 shown in Figure 3. Box 26 has an opening 20 into which tang 17  
6 may be inserted. Box 26 has a front side 27, a left side 28, a  
7 right side 29 and a rear side 30. The tang 17, as shown in  
8 Figure 2, when inserted in opening 20 forces the depressable arm  
9 19 downwardly until the stop edge 25 goes past the contact bar 41  
10 of box 26, as shown in Figure 1. At that point, the tang is  
11 locked into the box. Tang frame 18 has a top surface 47. The  
12 depressable arm 19 rises above the top surface 47 when in its  
13 locked position and moves below the top surface when the cover is  
14 depressed to release the tang from the female support receptacle  
15 box 26.

16 Box 26 has a cover 32 which is hingedly held by arm 33 by  
17 way of living hinge 34. Cover 32 has a lid 35 and side walls 36  
18 which protect the interior of box 26 when the cover is closed, as  
19 is clear from viewing Figure 1. Cover 32 has a recess 37 which  
20 surrounds a portion of hinge pin supporting arm 16 when the cover  
21 is in a closed position. The side walls 36 support a pair of  
22 protrusions 38 which snap into a pair of recesses 38' to hold the  
23 cover in a closed position.

1           The operation of the assembly is seen best by viewing Figure  
2   1 where movable lid 35 is shown with a protrusion 39 on an  
3   underside thereof which contacts the depressable arm 19. The  
4   cover 32 is normally in the position shown in Figure 1 when the  
5   assembly is locked in place. The cover, however, may be moved  
6   downwardly with respect to that shown in solid line in Figure 1  
7   to the position shown in phantom line wherein the protrusion 39  
8   moves the depressable arm to its unlocked position 40. The stop  
9   edges 25 move below stop bar 41 and permit the tang 17 to be  
10  pulled outwardly from the support receptacle box 26. The tang  
11  supporting assembly 17 is held to the flat upper surface 43 of  
12  the toilet by a conventional toilet bolt 44 which passes through  
13  conventionally spaced vertical holes 45 and a flat upper surface  
14  43 of the toilet.

15           Preferably, a stop arm 46 is formed below stop edge 25 to  
16  limit the upward movement of depressable arm 19 and to provide an  
17  audible click when the flexible arm is latched. The assembly of  
18  the present invention is especially clean and because of the  
19  positioning of cover 32 over the tang, the interior of the closed  
20  box is protected from soiling from use of the toilet. The  
21  assembly is easily removed and easily replaced for cleaning with  
22  a minimum of time and effort.

1           The present embodiments of this invention are thus to be  
2       considered in all respects as illustrative and not restrictive;  
3       the scope of the invention being indicated by the appended claims  
4       rather than by the foregoing description. All changes which come  
5       within the meaning and range of equivalency of the claims are  
6       intended to be embraced therein.